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Ramboldia amarkantakana (Lecanoraceae, Ascomycota), a new lichen species from India

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Abstract – The new species *Ramboldia amarkantakana* is characterized by having a whitish, granular thallus, pale orange to dark reddish brown apothecia, 8-spored ascus, and simple, straight to curved ascospores. It is known from the Amarkantak region of central India where it is found on *Shorea robusta*.

Key words – *Pyrrhospora,* Achanakmar, microlichen, deciduous forest

Introduction

During field exploration in the newly established Achanakmar Amarkantak Biosphere Reserve in the central tropical region of India a large number of lichen samples have been collected. The Biosphere Reserve has *Shorea robusta* dominated vegetation and a unique topography of undulating hilly terrain that supports growth of numerous interesting lichen taxa. New and otherwise interesting lichen species reported earlier from the area include *Pertusaria amarkantakana* Preeti Srivast. & D.D. Awasthi, *P. indica* Preeti Srivast. & D.D. Awasthi, *P. rimosa* D.D. Awasthi & Preeti Srivast. (Awasthi & Srivastava 1993), *Caloplaca amarkantakana* Y. Joshi & Upreti (Joshi & Upreti 2006) and *Schadonia indica* Upreti & Nayaka (Upreti & Nayaka 2006). Out of 130 species belonging to 44 genera and 25 families from the Biosphere Reserve (Upreti & Satya 2007), some of the microlichen taxa are currently unidentified as to species. One specimen annotated earlier as *Pyrrhospora* sp. is described here as a new species of *Ramboldia.*

Materials and methods

Thin hand-cut sections of apothecia and thallus were mounted in plain water, cotton blue, 5% KOH and iodine solution and observed under a compound

microscope. For chemical spot tests the usual reagents of K, C and PD were used. TLC was performed in solvent system A following Walker & James (1980).

Taxonomic description

Ramboldia amarkantakana Upreti & Nayaka, **sp. nov.** PLATE 1

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Thallus corticola, albo-granulato pulverulentus, apothecia ad 2.0 mm diam., convexa, discis pallide, aurantiaco-brunneis et buffobrunneis, pruinosis, hypothecium pallidum vel minus fuscum, K+ violacens, epihymenium fuscum, K+ violacens, sporae hyalinae, ellipsoidae, 14–22 × 3–5.5 µm.

ETYMOLOGY: From the Amarkantak, referring to the type locality.

HOLOTYPUS: INDIA, Madhya Pradesh, Shahdol district, Amarkantak, Dudhara, 2 km away from Kapildhara, alt. 800 m, on bark of *Shorea robusta*, 27th Oct. 1987, Upreti 201737 (LWG–holotype).

THALLUS corticolous, whitish, cream yellow, granular-powdery, forming up to 8 cm patch, 100-180 µm thick, continuous or cracked areolate, granules up to 15 µm diam., medulla 50–70 µm thick. PROTHALLUS blue-black, photobiont *Trebouxia,* cells globose, 5–7 µm diam.

APOTHECIA common, up to 2.0 mm in diam., sessile, constricted at base, proper margin concolourous with thallus irregular-discontinuous, granular, thick when young, excluded when mature, disc pale orange brown to deep reddish brown, rough, plane to strongly convex. EXCIPLE biatorine, 30–50 µm thick when young, indistinct at maturity, eihymenium brown, inspersed with fine granules, K+ purple, hymenium colourless, amyloid, 40–50 µm high, hypothecium pale brown to brown, amyloid, K+ reddish purple, 60–75 µm thick, paraphyses simple or occasionally branched, asci broadly clavate, 8 spored, 25–30 × 8–12 µm; ascospores colourless, ellipsoid, straight to slightly curved, simple, 14–22 × 3–5.5 µm.

CHEMISTRY: Thallus K+ yellow, C–, Pd–; apothecial disc and epihymenium K+ purple, C+ bluish-black to violet, Pd–; hymenium and hypothecium I+ blue, exciple K+ purple. TLC: Atranorin, Haematommone and unidentified lichen substances with purple-brown spt. at rf class 7, pale pink spt. at rf class 2, and light yellow spt. between rf class 4–3.

DISTRIBUTION AND ECOLOGY: *R. amarkantakana* is found growing on *Shorea robusta* tree trunk at a height of 1–1.5 m above ground in moist places near a stream at an altitude of 800 m. The tree bark at this height exhibits a rough, hard and furrowed condition that allows an easy foothold to the lichen where it forms large patches up to 15 cm diam. *S. robusta* is one of the most common trees in the semi-evergreen or deciduous forests in tropical India and an

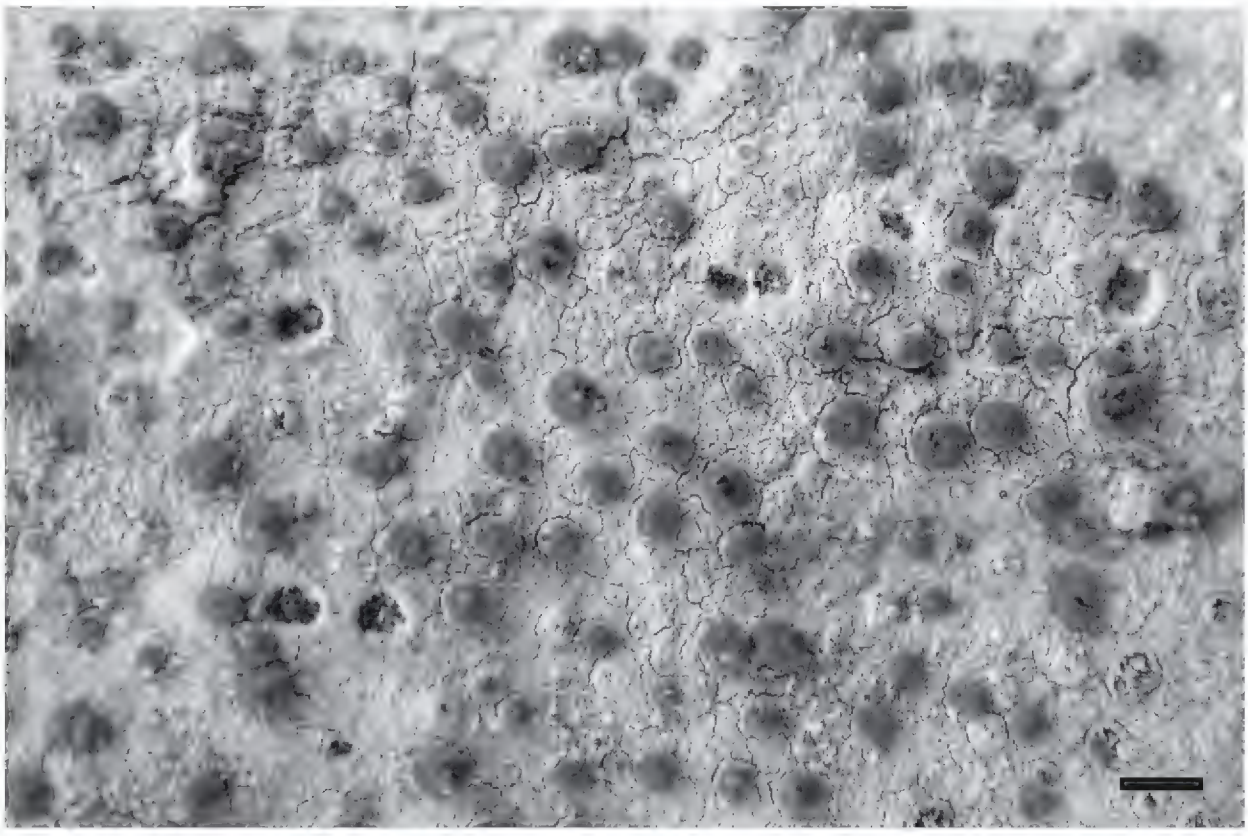

Plate 1. Habit of *Ramboldia amarkantakana* (from holotype, scale bar = 2 mm)

excellent host for several lichens. About 70 species are reported to grow on *S. robusta* in India (Satya et al. 2005). Other common associated species belong to the genera *Lecanora, Buellia, Dirinaria, Heterodermia* and *Pertusaria.*

Remarks: *R. amarkantakana* is characterized by a white to cream yellow, granular, K+ yellow thallus, pale orange to dark reddish brown apothecia, granular, K+ purple, C+ bluish-black to violet and Pd– disc, and 8-spored asci, simple straight to curved ascospores. Kalb et al. (2008) reported the occurrence of *R. manipurensis* (Kr.P. Singh) Kalb et al. in India. *R. manipurensis* differs from *R. amarkantakana* in having 16-spored asci. Similar species in addition to *R. amarkantakana* are *R. aurea* (Kalb & Elix) Kalb et al., *R. aurantiaca* (Aptroot & Diederich) Kalb et al., *R. neolaeta* Kalb & Elix, *R. cinnabarina* (Sommerf.) Kalb et al., and *R. brunneocarpa* Kantvilas & Elix. *R. aurantiaca* differs in having russulone and haematommone as major chemical substances and smaller (8–11 × 3–4 µm) ascospores. *R. neolaeta* differs in having smaller (11–15 × 3–5 µm) ascospores, a grey to greenish grey or dark brownish grey thallus and bright orange-red, glossy, epruinose apothecia. *R. aurea* also differs in having smaller (8–11 × 3–4 µm) ascospores and contains thuringione and arthothelin chemical substances. *R. cinnabarina* differs in having soredia and containing is readily distinguished by the presence of fumarprotocetraric acid. *R. brunneocarpa* differs in having a verruculose and deeply cracked thallus, smaller (9–16 × 2.5–4 µm) ascospores, and the presence of norstictic chemosyndrome.

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